

# Delaware Electric Cooperative

Efficiency, Conservation, Demand Side Management







# Efficiency & Conservation

# LED Lighting

LED vs Incandescent = 80% savings

LED vs Mercury Vapor = 75%

LED vs High Pressure Sodium = 60%



# CFL Lighting

CFL = 145,000 bulbs

Savings = 5,500,000 kWh/yr







# Poultry LED



60 Watt Incandescent



10 Watt LED

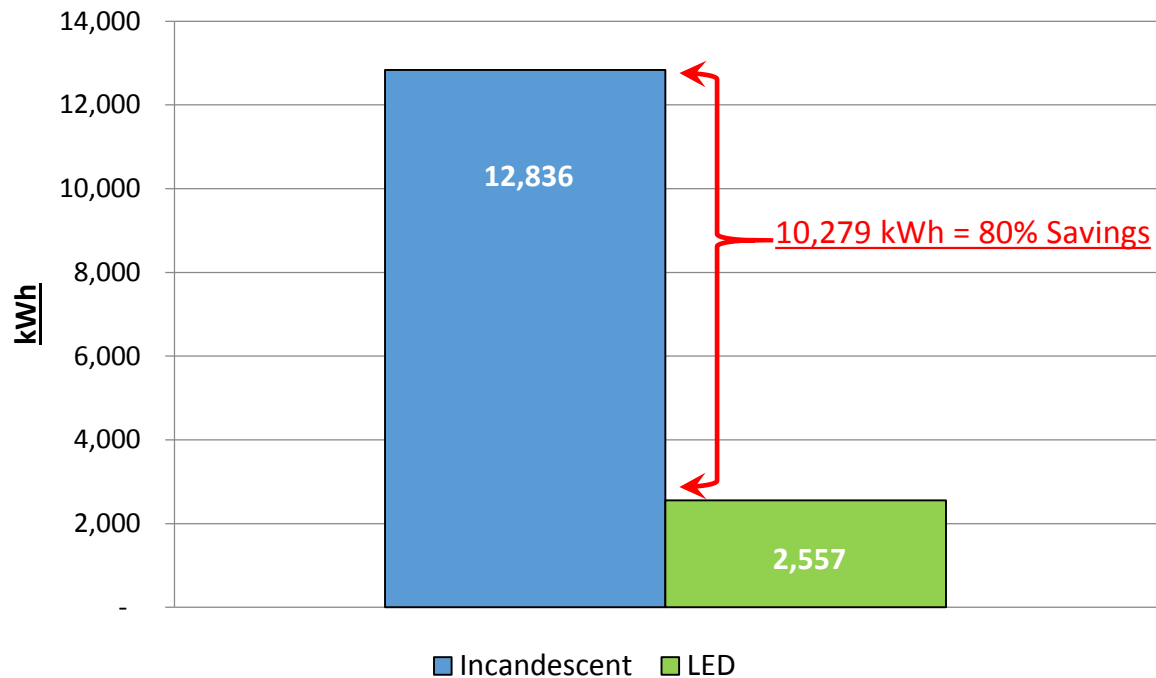


# Poultry LED



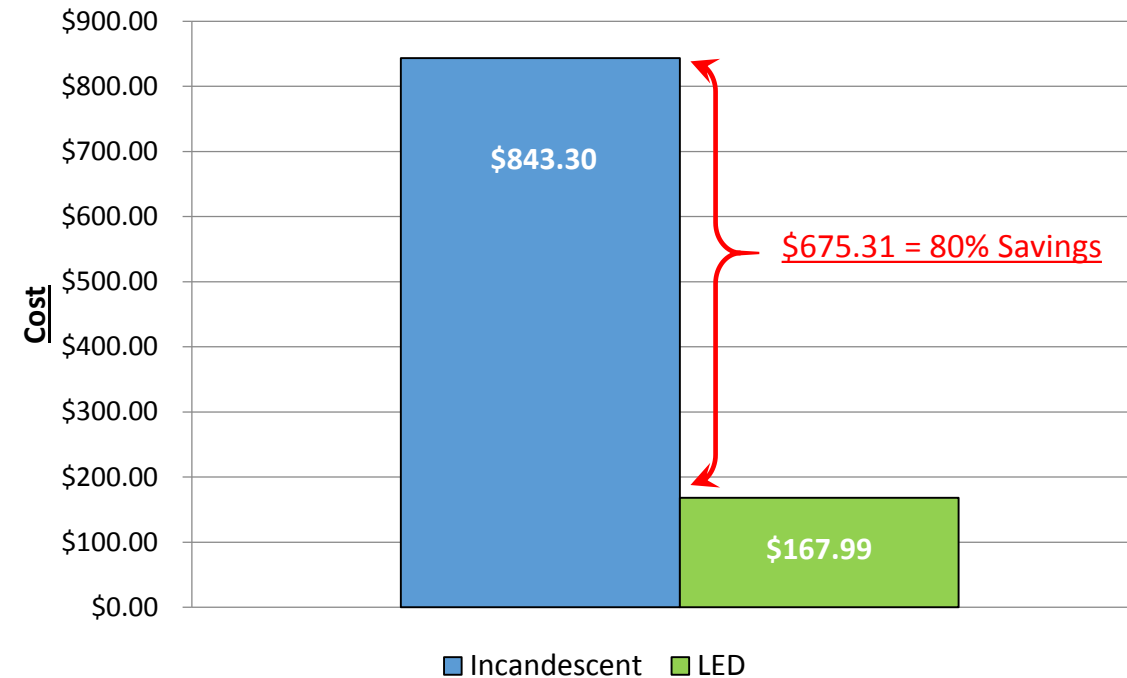
## Energy Usage

7 Flocks



## Energy Cost

7 Flocks



60 Watt Incandescent vs 10 Watt LED



# Poultry LED

2012 = 54 conversions

2013 = 33 conversions

2014 = 106 conversions

**Total = 193**

LED Bulbs = 14,896

Cost = \$376,000

Annual Savings = 1,750,000 kWh  
= \$121,000





# Dairy Farm Efficiency

7 Dairy Farms

Cows = 1,538

Annual kWh Usage = 1,173,132

Potential Savings = 315,418 kWh (27%)

- Water Heating
- Refrigeration
- Pumps
- Circulation/Cooling
- Lighting





# Water Heating

Heat Pump Water Heaters = 56

Solar Hot Water Heaters = 11

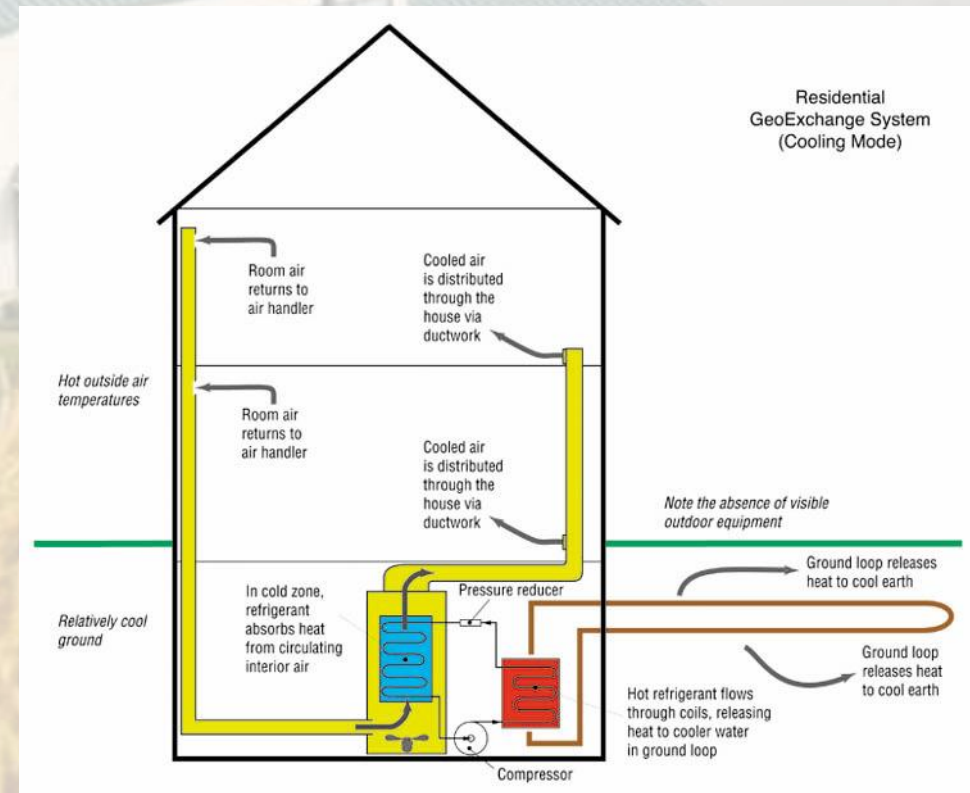
Grants = \$46,800



# Geothermal Heating/Cooling

Systems = 438

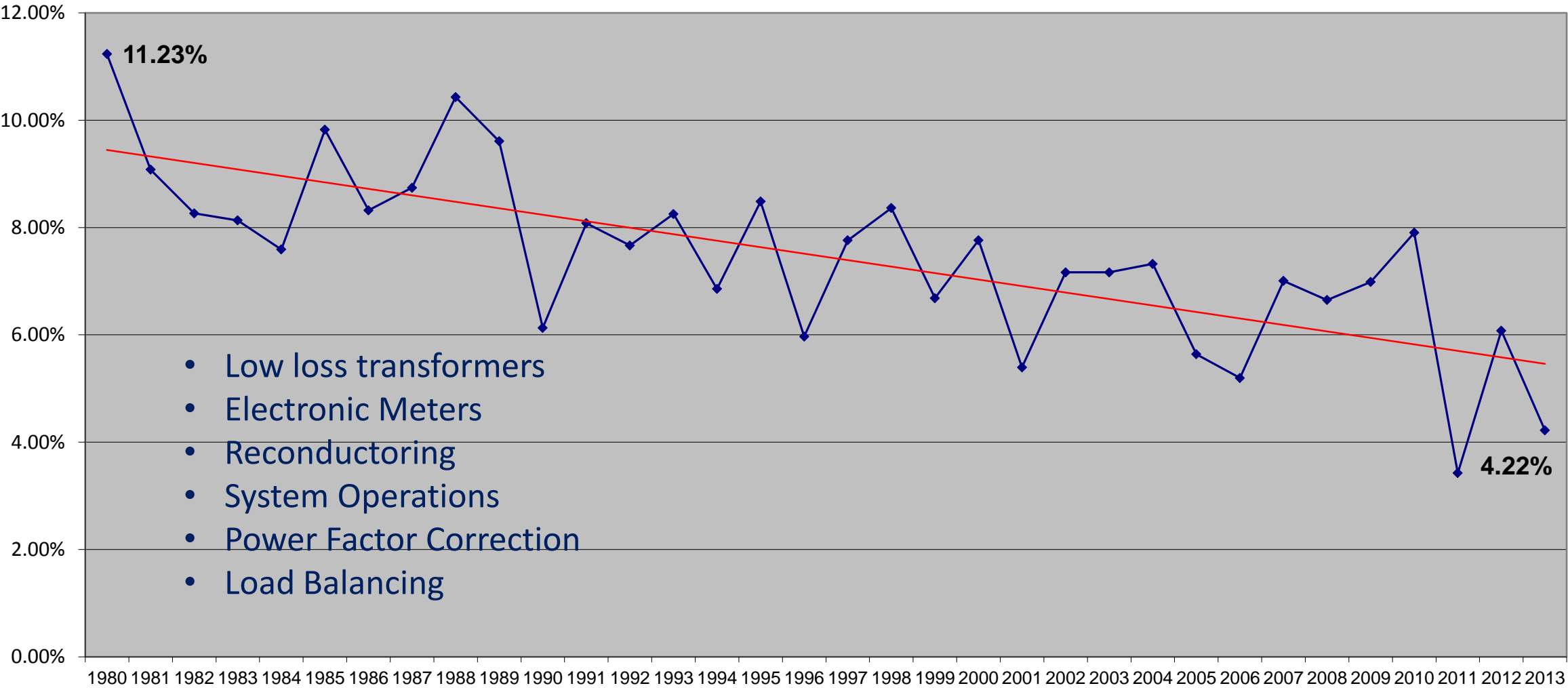
Grants = \$1,100,000





# System Improvements

**System Losses**  
**15,000,000 kWh Savings/yr**



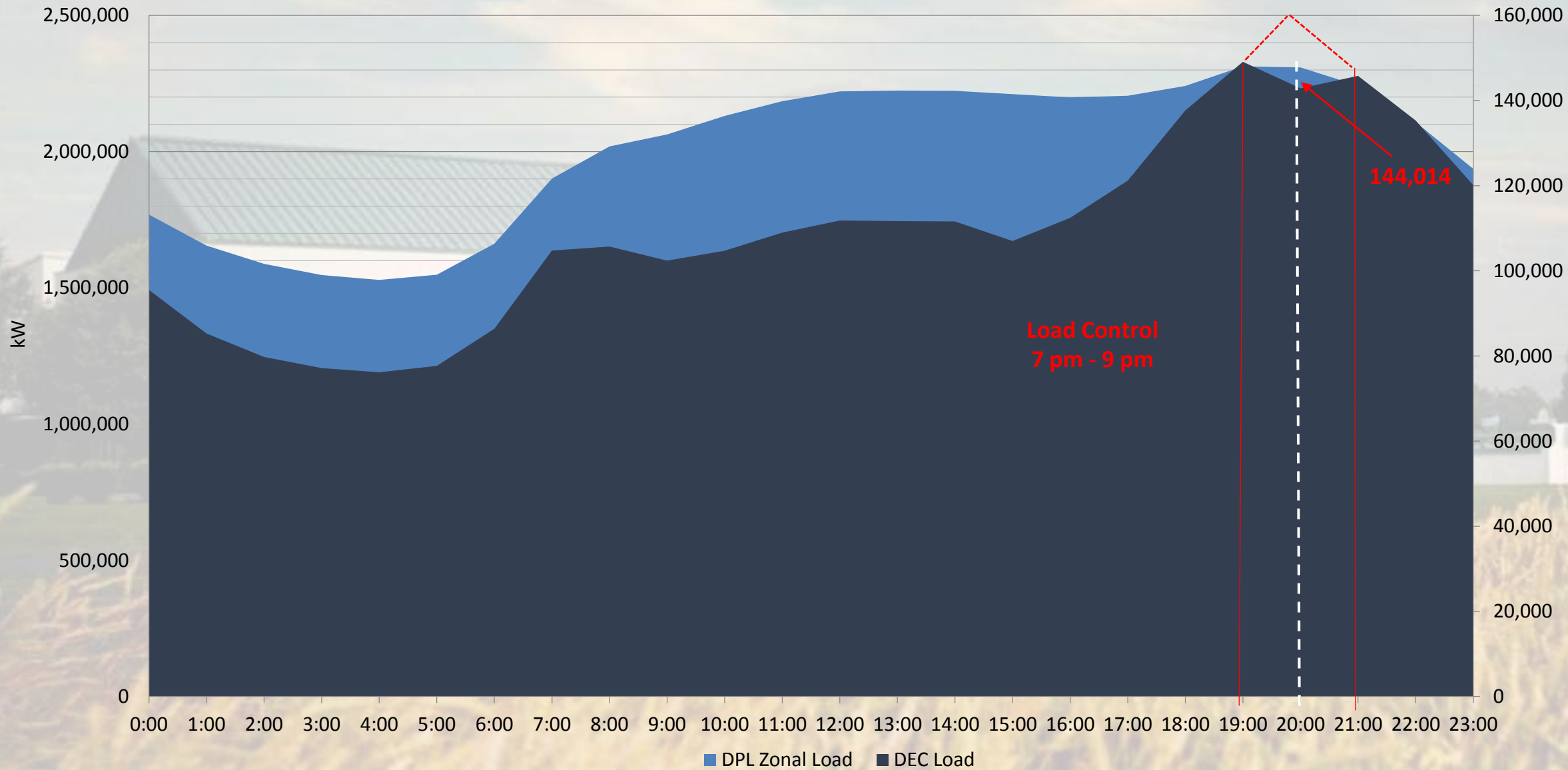


# Demand Side Management



October 15, 2014

CP = HE 20:00



# Variable Frequency Drives



184 Diesel Generators Converted to Electric



# Conservation Voltage Reduction

Voltage Reduction of 2.5% - 5.0%  
= 4.5 MW





# Beat The Peak

Voluntary Reduction in Usage

49,876 Indicator Lights

51,193 Email Addresses

## Switch & Save

Switches = 21,138

Water Heaters = 17,342

AC/HP = 9,856

Total Appliances = 27,198





# Solar

506 Installations = 3.6 MW/ac

Avg. = 5.8 kW    Max. = 1.2 MW

Grants = \$2,000,000

DEC Generation = 4.0 MW/ac

**Total = 7.6 MW/ac**

**12,500,000 kWh/yr**

Bruce A. Henry Solar Energy Farm

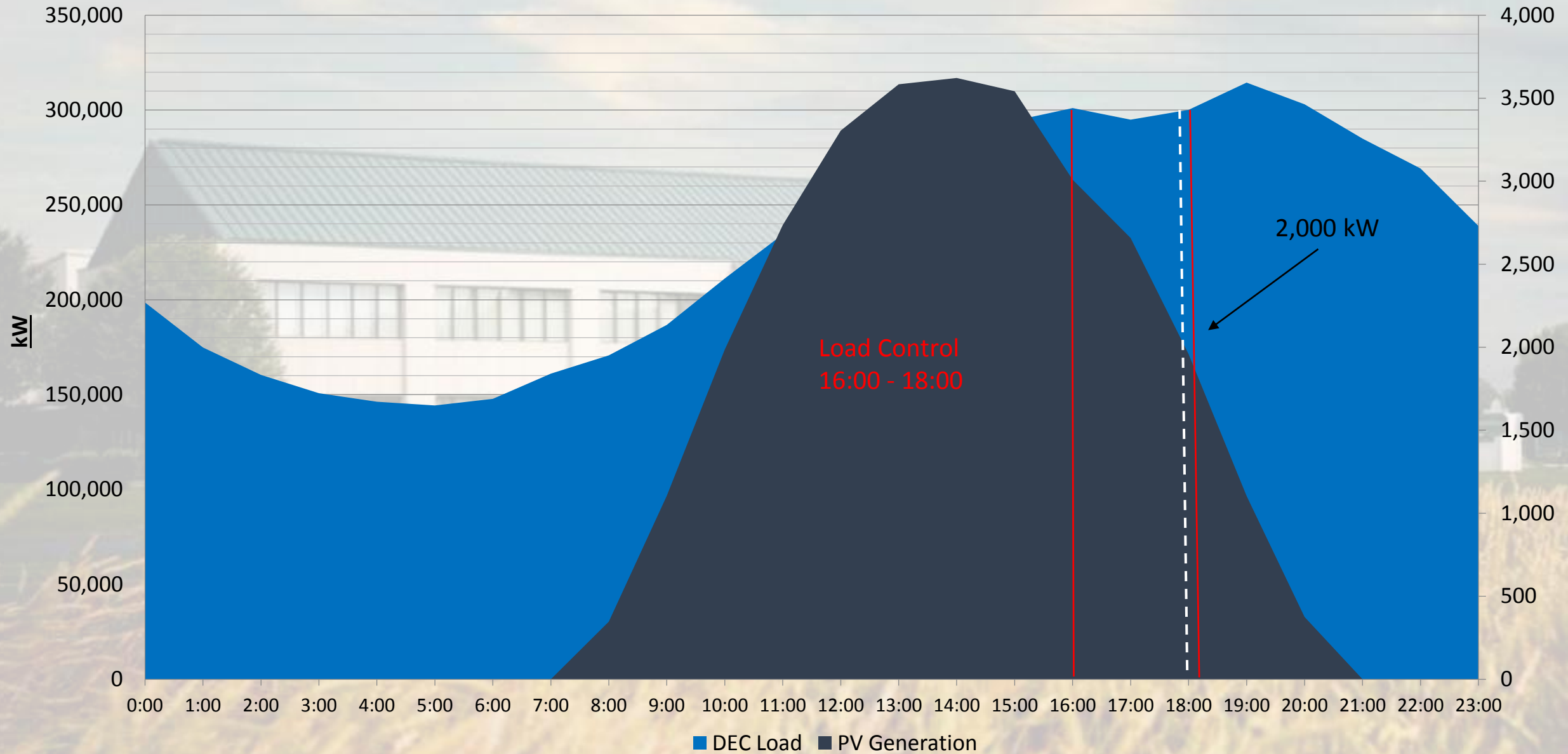
4 MW = 6,500,000 kWh/yr





**June 18, 2014**

CP = HE 18:00





# Interruptible Rate

Poultry Houses, Irrigation, Schools, Business = 955



# Time of Use Rates

- Residential
- Residential Space Heating
- General Service
- Irrigation







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